1872MNRAS..32..225D

Summary of Sun-spot Observations made at the Kew Observatory during 1871. Communicated by Messrs. De La Rue, Stewart, and Loewy.

Months.	Days of Observation.	Numbers given to the new Groups in the Kew Catalogue.	Number of New Groups.	Days without Sun-spots.
January	13	No. 1529 to No. 1547	19	0
February	16	1548 ,, 1576	29	0
March	26	1577 ,, 1619	43	0
April	21	1620 ,, 1647	28	0
May	25	1648 ,, 1677	30	0
June	21	1678 ,, 1698	21	0
July	21	1699 ,, 1719	21	0
August	23	1720 ,, 1740	21	0
September	19	1741 ,, 1752	12	0
October	14	1753 ,, 1765	13	0
November	13	1766 ,, 1786	21	0
December	7	1787 ,, 1799	13	0
Total	219	No. 1529 to No. 1799	271	0

A comparison of the numerical results with those published in the *Monthly Notices* of the Royal Astronomical Society for the year 1870, will prove that the latter year includes the maximum of Solar activity during the present period. The diminution is not only manifested in the numbers of the new groups, but also in their magnitude. Indeed, there is so marked an absence of really large and striking groups during the past year, that it more fully bears out our opinion, expressed on several previous occasions, that only by a continuous and well-devised plan of determining the absolute magnitudes of the Sun-spots from day to day, and from year to year, will light be ultimately thrown upon the true nature and relation of the forces, which regulate a series of phenomena of so well-established a cosmical interdependence that their discovery will undoubtedly mark a greater epoch in astronomical science than that of the universality of gravitation.

A striking feature in last year's observations seems to have been the occurrence of groups in comparatively high latitudes, especially in the Southern Solar hemisphere; a group observed between the 21st and 23rd of March had the almost unprecedented high latitude of —43°, while latterly, towards the end of the year, several groups in almost as high a latitude have repeatedly made their appearance. Such Polar groups appear to be the more short lived, the greater the distance from the well-defined equatorial region of common Solar activity; and there are indications that they are produced by sudden, but most violent, convulsions: the group of March, above alluded to, left long after its disappearance a ridge of faculous matter behind it, covering an area of at least twenty times the magnitude of the spot itself, and spreading out along a parallel of latitude more in the manner of a

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cometary appendage than one of the usual faculæ which surround the central area of depression.

The Solar Prominences. By Father Secchi.

(*From the Comptes Rendus.* Abstract.)

"I have the honour of presenting to the Academy the result of all my observations made on the Prominences during the year 1871. I think it indispensable to present this summary, for it demonstrates that the conclusions, announced after the first observations, are confirmed by a sufficiently long period, comprising nine solar rotations. New facts also are made manifest, which bear importantly on the solar theory. The nine synodic rotations (approximate), and the number of days of effective observations, were distributed as follows :—

Rotation.		Days of observation.
I.	April 23rd to May 21st . .	25
II.	May 22nd to June 18th . .	24
III.	June 19th to July 15th . .	26
IV.	July 16th to August 12th . .	28
V.	August 13th to September 9th .	25
VI.	September 10th to October 7th .	18
VII.	October 8th to November 9th .	14
VIII.	November 5th to December 4th .	8
IX.	December 5th to December 31st .	16

"The total number of prominences noted and figured amounts to 2667; the total number of days of complete observation is 184.

"The following table* contains the number of observed prominences arranged in bands of heliographic latitude ten degrees wide :—

	Number of Prominences.	
	Northern Hemisphere.	Southern Hemisphere.
90° to 80° . . .	118	139
80 ,, 70 . . .	142	180
70 ,, 60 . . .	73	87
60 ,, 50 . . .	87	61
50 ,, 40 . . .	125	156
40 ,, 30 . . .	182	183

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* In the original paper the numbers are given in all the tables for each rotation. The tables so arranged would not be suited to these pages. Moreover, none of the results dwelt on by Secchi as depending on latitude, require the evidence of individual rotations. He considers the results for the whole Sun, with reference to the different rotations; and the necessary evidence for this purpose is here presented separately.

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